

ABSTRACT OF THE INVENTION

The present invention relates to a medical device, and in particular, to a stent-based valve. The valve includes a radially expandable structural frame including an anchor structure having a first and a second open end, a connecting member having a first and a second end, and a cantilever valve strut having a first and a second end. The first end of the connecting member is attached to the second end of the anchor structure. The first end of the cantilever valve strut is cooperatively associated with the second end of the connecting member. The prosthetic valve further includes a biocompatible membrane assembly having a substantially tubular configuration disposed longitudinally about at least a portion of the connecting member. The membrane assembly has a first end having a first diameter and a second end having a second diameter, wherein the first diameter is greater than the second diameter. The first end of the membrane assembly is attached along the second end of the cantilever valve strut.